

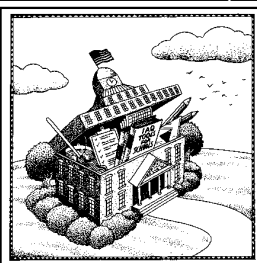


# CASE STUDY

## WILLIAM BLACKSTONE ELEMENTARY SCHOOL

*Boston Public Schools, Massachusetts*

### Indoor Air Quality



### Tools for Schools

William Blackstone Elementary School, located in Boston's South End, is part of the Boston Public Schools system. Of the 120 schools in the system, three were chosen to implement EPA's *Indoor Air Quality Tools for Schools (IAQ TFS)* Kit and program. Of these three schools, Blackstone Elementary was the first to do so.

## Approach—Project Description

### School Description

The five-story school building was constructed in 1975 using the typical design of that time—brick walls, mostly flat roofs, plexiglass windows, and visible duct work. For years, indoor air quality (IAQ) was an issue at Blackstone Elementary. The school nurse noticed that the asthma rate was higher than the national average of two cases per classroom. Staff were also aware of serious problems with water intrusion during heavy rains, stained and collapsed ceiling tiles, peeling paint and stains on the walls, rust on support beams, and water damage to equipment and furniture.

### IAQ Team

In January 1999, the IAQ Team at Blackstone Elementary was the most prepared to meet regularly to implement the program. The school's IAQ team met six times from January to June 1999, using the *IAQ TFS* Kit as the basis of their discussions. The Blackstone team consisted of school district officials, the school principal, the school nurse, teachers, parents, custodians, and EPA regional staff.

The IAQ team and a ventilation engineer from the Boston Public Schools system conducted a walkthrough inspection of practically every area of the school. School staff were given the appropriate documents from the Kit, including checklists covering all areas of the building. About 80 percent of the checklists were returned.

### Problem Identification

Problems identified by the checklists and walkthrough included the following:

- An above-average number of asthma cases and illnesses typically associated with indoor air quality problems (headaches, nausea, etc.).
- Water damage, such as mold and mildew; missing, stained, and broken ceiling tiles; fungal growth on ceiling tiles; and damaged ceiling and wall plaster.
- Thermal discomfort, such as widely fluctuating temperatures, too high or too low humidity levels, and cold drafts.
- Ventilation problems, such as poor air circulation and lack of exhaust fans in some bathrooms.
- Cleanliness problems, such as dust accumulation around the supply vents and surrounding ceiling tiles, infrequent dusting and vacuuming, and pest problems.

***“Every school has a Healthy Schools Team dedicated to making their school safer and healthier. We received some great press from implementing the Kit—the local newspapers wrote several articles about our Healthy Schools Team.”***

*-Robin Chappell  
District Health  
Official*

(over)

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***EPA's IAQ TFS Kit gave the team the leverage it needed to persuade the school district to improve the environmental problems in the school.***

### **Lessons Learned**

#### ***Short-term Improvements***

Based on the information found in the walkthrough, the IAQ team brainstormed and identified specific solutions for improving the indoor air quality at Blackstone Elementary School. In addition, EPA's IAQ TFS Kit gave the team the leverage it needed to persuade the school district to improve the environmental problems in the school. Once the Superintendent was informed of the school's IAQ issues and the team's recommendations, Blackstone Elementary was placed on a high-priority list for roof repairs and other renovations.

A number of improvement projects have been completed, including roof repairs during the summer of 1999. Current plans call for installing new energy-efficient lighting and new ceiling tiles. Additionally, carpeting will be removed and replaced with tiles in some classrooms. The school nurse intends to document student health and asthma cases over the next year to establish a link between the indoor environment and children's health.

#### ***Long-term Practices and Policies***

Blackstone Elementary is now in its second year of IAQ TFS implementation and hopes to collect information on the improved health of students and staff. Much of the credit for the school's progress rests with the principal, Ms. Ruiz-Allen, who took over the project after the first meeting and welcomed all ideas. She was instrumental in getting the Superintendent involved and ensuring that the repairs were done quickly. The presence of officials from EPA Region 1, the Boston Public Health Commission, and Boston Public Schools at the meetings also proved key in Blackstone's success, as these groups created a strong sense of purpose and assured the team that their IAQ problems were not impossible to fix.

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